

Example scenario of conducting a socio-economic impact analysis for Spray Irrigation v/s VPDES discharge

Scenario: A 50 acre commercial/residential project seeks approval and undertakes the Analysis of Wastewater Management Alternatives. The Phase 1 technology and environmental review determines that “Spray-Irrigation” based wastewater treatment technology is feasible. Furthermore, the developer has come into agreement with farmers to use a total of 300 acres for spray-irrigation. As part of the Phase 2 analysis, a socio-economic impact assessment would call for a comparison of socio-economic impact assessment of “spray irrigation” versus a VPDES permit based surface water discharge. Conducting such an assessment would include compiling the following types of information:

- **Project Specific Impacts (Benefits)**
 - Net tax revenue from 50 acre sub-division of residential and commercial use (mixed development) provides \$ X million in tax revenue through employment during construction phase and future “actual” occupancy
 - If Spray Irrigation: costs of adopting alternative technology – installation costs, O&M, storage and distribution, regulatory compliance and costs of conducting alternative use analysis (AUA)
 - If expansion of existing wastewater facility through VPDES facility: additional costs of regulatory compliance
- **Locality/county level financial impact (Spray Irrigation or VPDES permit)**
 - Net change in tax revenue to county due to sacrificed future use of 300 acres of land for future development
 - Change in tax revenue due to implementation of 50 acres of land development project
 - Net change in net sewer rates to residents of locality, as a result of adopting alternative technology (+ / -)
- **Valuation of beneficial uses and mitigation measures**
 - **Shellfish resources** - VPDES permit based discharge related commercial loss of existing and future usable shellfish resources (*Information on water quality and shellfish viability available from: VIMS, VMRC, VDACS*)
 - **VPDES / Spray Irrigation based other beneficial uses impacts:** Assess potential loss of beneficial uses due to 50 acres of development and 300 acres of spray irrigated land through use of a “nonuse value survey” (tourism, habitat alteration, aesthetics, recreation, etc) (*EPA, DOI – Natural Resource Damage Assessment Manual, RFF, and other sources*)
 - **Costs of potential mitigation** - If Spray irrigation - Financial impacts of adopting any conservation practices (buffers, easements) to support project (*VA DCR, VMRC and EPA NCEE – National Center for Environmental Economics*)